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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

TAGUCHI ET AL

Application No.: 09/642,765

Art Unit: 1725

Filed: August 22, 2000

Examiner: C. Cooke

For: LEAD-FREE SOLDER PASTE
FOR REFLOW SOLDERING

RESPONSE

Assistant Commissioner for Patents
Washington, D.C. 20231

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Dear Sir:

This response is responsive to the objection to claim 5 in the Official Action mailed on October 17, 2002 in connection with the present application. The claims in the present application are under appeal, and an Appeal Brief is being filed together with this response. The period for filing the Appeal Brief has been extended to and including April 17, 2003 by the payment of the appropriate fees, thereby extending the period for filing this response.

Page 8 of the Official Action of October 17, 2002 contains an objection to claim 5 under 37 CFR 1.75 as supposedly being a substantial duplicate of claim 4. In a telephone interview with

the Examiner held shortly after the mailing date of the Official Action to discuss the objection, the Examiner agreed with reasons set forth in the interview explaining why claim 5 is not a duplicate of claim 4. However, the Examiner requested that those arguments also be set down in writing. What follows is the requested written explanation.

MPEP 706.03(k), which describes the issue of duplicate claims in an application, does not give a definition of duplicate claims. However, the issue of duplicate claims in a single application seems analogous to the issue of double patenting, since both issues deal with claims being duplicates of one another. MPEP does provide a definition of double patenting. MPEP 804 states, concerning double patenting between an application and a patent, that "A reliable test for double patenting under 35 USC 101 is whether a claim in the application could be literally infringed without literally infringing a corresponding claim in the patent."

If the above-described test for double patenting were applied to the issue of duplicate claims in a single application, the test would be whether one claim in an application could be literally infringed without literally infringing another claim in the same application. If so, then the two claims could not be duplicates of one another. Applying this test to claims 4 and 5, the question then is whether one of claims 4 and 5 be infringed without infringing the other claim.

Claims 4 and 5 are both dependent claims depending from independent claim 3. Claim 3 describes a solder paste including

a plurality of different types of metal powder mixed with a flux, with the plurality of metal powders including two different Sn alloy powders. Each Sn alloy powder includes 0 - 8 mass % of Ag, 0 - 5 mass % of Cu, and at least 80 mass % of Sn, and the plurality of metal powders have a composition when melted of 1 - 5 mass % Ag, 0.5 - 3 mass % Cu, and a remainder of Sn.

Claim 4 specifies that the two Sn alloy powders of claim 3 contain the same components as each other in different proportions, and claim 5 specifies that the plurality of metal powders include two different Sn-Ag-Cu alloy powders. Although there exist pastes which would infringe both claim 4 and claim 5, there also exists pastes which would infringe only one of the two claims, such as the following example.

Claim 4 reads on a solder paste comprising, as a plurality of different types of metals powders, a first Sn-Ag powder (such as the Sn-5.6Ag powder used in Example 1-2), a second Sn-Ag powder (such as the Sn-7.8Ag powder used in Example 1-3), and a Sn-Cu powder (such as the Sn-1.2Cu powder used in Example 1-2). Claim 4 reads on such a composition because the solder powder includes two Sn alloy powders (the two Sn-Ag alloy powders) which contain the same components (Sn and Ag) in different portions. Thus, claim 4 would be infringed by such a paste.

Claim 5 would not read on this composition because the solder composition does not include two different Sn-Ag-Cu alloy powders. In fact, it includes no Sn-Ag-Cu powders. Claim 5 would therefore not be infringed by this paste. (To refresh the Examiner's memory, the Examiner noted during the telephone

interview, as one of the differences between claims 4 and 5, that claim 4 refers to "the two Sn alloy powders", whereas claim 5 refers to "the plurality of metal powders").

Many other examples could be given to illustrate that claims 4 and 5 are not necessarily infringed by the same product, but a single example is sufficient for the purposes of the above test. It is thus clear that claims 4 and 5 are not of the same scope, so they are not substantial duplicates of one another, and therefore they are proper under 37 CFR 1.75. For this reason, the Examiner is requested to withdraw the objection to claim 5.

Respectfully submitted,



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